

Remarks/Arguments

This Amendment is submitted in reply to the Office Action, dated April 21, 2004. Because this Amendment is filed within the allotted shortened statutory period of 3 months, no extension of time is required under 37 CFR 1.136(a).

Claims 1-3, 5, 6, 13, 15-18, and 53-64 are pending in the application. Claims 4, 7-12, 14, 19-52 were previously canceled.

Claims 1-3, 5, 6, 13, 15-18, and 53-64 were rejected under 35 U.S.C. 112, second paragraph as being indefinite. Accordingly, Applicant has addressed the antecedent basis issue identified by Examiner in claims 1 and 59. Further, the Examiner noted various informalities in claims 54-57 and 61-64 that allegedly rendered these claims vague and indefinite. Accordingly, Applicant has replaced the term "a_i" with "a_{ij}" in claims 54 and 61, the term "z_{im}" with "z_{in}" in claims 55 and 62, and the term "z_{2i}" with "z_{2n}" in claims 56 and 63. Applicant has defined the terms "b_{land}, z_{nn}, and b_{capital}" in claims 56-58, 63, and 64, where applicable, in accordance with the specification. Applicant respectfully requests the withdrawal of the rejection of claims 1-3, 5, 6, 13-15-18, and 53-64 based on 35 U.S.C. 112 in view of the above amendments.

Claims 1-3, 5, 6, 13, 15-18, 54, 56, 57, 59, 61, 63, and 64 were rejected under 35 U.S.C. 103(a) as being unpatentable over Ell et al. (U.S. App. No. 2003/0036852) in view of McCauley (U.S. Pat. No. 6,058,351). This rejection is respectfully traversed for the following reasons.

Ell discloses "a system and method for creating crop input requirement maps for site-specific farming." (Abstract.) In Ell, "the profit analysis calculator 326 compares a variable-rate application of agricultural products with a flat-rate application for a targeted field." (Col. 12, paragraph 174.) Ell bases its profit analysis on the targeted site-specific applications of fertilizer to increase yields in nutrient-limited areas or to save fertilizer without materially reducing yields in high quality soil areas. (Col. 12, paragraph 174.) However, nothing in Ell teaches or suggests using third-party financial data (which is external to the farm site) in an objective function for profit maximization to generate or determine a preferential custom farm plan.

Ell lacks the maximization of an objective function bounded by resource constraints to generate a corresponding custom farm plan with a corresponding desired economic performance. Ell merely considers the impact of variable-rate

application of agricultural products on yield, without taking into account third-party financial data or other input information pertaining to a farm as claimed in claim 1.

McCauley discloses a system for determining farm management zones of a field. (Col. 2, lines 47-48.) For example, yield data, fertilizer data, moisture content data, soil compaction data, and PH level data are sampled for corresponding positions in the field and may be expressed as an input vector $X(P_i)$. (Col. 5, lines 48-60.) The McCauley system outputs different management zones (e.g., three management zones in FIG. 6) based on the input vectors and neural network. (Col. 5, lines 63-67 and Col. 6, lines 1-3.) The neural network determines the weights to be applied to the input vectors during a training process. (Col. 6, lines 31-35.) An output element $Z(P_i)$ apparently represents an element of the input vector data multiplied by a corresponding weight (W). (Col. 5, lines 17-25.) The maximum element of the output vector $Z(P_i)$ of the output elements at a corresponding position is used to identify a respective management zone for that particular position. (Col. 5, lines 28-33.)

Even if Ell and McCauley could be combined without undue experimentation or other technical problems, the alleged combination of Ell and McCauley would not meet claim 1. The alleged combination of Ell and McCauley merely comprises the profit analysis calculator 326 of Ell that would be applied on a management zone by management zone basis in accordance with management zones determined in McCauley.

Claim 1 now recites the financial information comprises "at least crop production cost data and crop market price data" which is applied in the objective function. The alleged combination of Ell and McCauley merely uses "soil fertility information", as opposed to "crop market price data", as input to the profit analysis calculator for calculations of the performance of site-specific farming with McCauley's management zones. (Page 12, Paragraph 175.) Ell and McCauley lack the input of the crop production cost data and crop market price data in accordance with an objective function, as recited in claim 1. Claim 1 previously explained that the objective function is "indicative of a corresponding economic performance of the farm for display or provision to said user," whereas the focus of Ell appears to be on the creation of crop input requirement maps for site-specific farming based on agronomic data, such as soil test values, elevation, desired crop yield, soil survey, as-applied

data, yield monitor data. (Page 1, Paragraph 8.) The claimed "crop market price data" of claim 1 further emphasizes the economic performance aspect of claim 1.

Claim 1 further recites that "resource constraints" are "consistent with the defined cropping strategy." The "cropping strategy" was added to clarify the difference between the "input information" and the "third-party financial information" in claim 1. The alleged combination of Ell and McCauley lacks the "third-party financial information" within the meaning of claim 1. Note that the cropping strategy of claim 1 is not limited to "site-specific" cropping strategies or "management-zone" cropping strategies as the alleged combination of Ell and McCauley. Accordingly, claim 1 is patentable over the alleged combination of Ell and McCauley for above reasons. Applicant requests the withdrawal of the rejection of claim 1 based on Ell.

Claims 2-3, 5, 6, 13, 15-18, and 53-58 are patentable for at least similar reasons to claim 1 because claims 2-3, 5, 6, 13, 15-18, and 53-58 depend upon claim 1. Therefore, Applicant respectfully requests allowance of claims 1, 2-3, 5, 6, 13, 15-18, and 53-58.

The amendments of claim 59 generally tracks the new language of claim 1 such that new claims 59 is patentable for at least similar reasons to claim 1.

Claims 60-64 depend on claim 59 and are patentable for at least the same reasons as claim 59.

In conclusion, it is believed that this application is in condition for allowance, and such allowance of all pending claims is respectfully requested.

Any fees or charges due as a result of filing of the present paper may be charged against Deposit Account 04-0525.

Respectfully,



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